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<u>L6</u>	(digital adj1 camera) and (remote adj1 server\$)	166	<u>L6</u>
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<u>L3</u>	((download\$) and (remote adj2 server\$)).ab.	59	<u>L3</u>
<u>L2</u>	L1 and ((download\$) and (remote adj2 server\$)).ab.	0	<u>L2</u>

C10/11

L1 (digital adj2 camera\$.ab.

844 L1

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L10: Entry 1 of 5

File: USPT

Feb 15, 2005

DOCUMENT-IDENTIFIER: US 6856414 B1

TITLE: Image data communication system, server system, method of controlling operation of same, and recording medium storing program for control of server system

Brief Summary Text (27):

It is preferred that the server system be further provided with a memory in which the quantity of original-image data that can be stored is allocated beforehand to each client computer, the memory storing temporarily the original-image data that has been received by the original-image data receiving unit. In this case, the original-image data transmitting unit of the client computer sends the server system the original-image data having a quantity of data less than the quantity of data allocated beforehand.

*preallocated*Drawing Description Text (26):

FIG. 38 is a block diagram illustrating the electrical structures of a digital camera, image transmitting unit, image database server and client computer constructing the system shown in FIG. 37;

Drawing Description Text (31):

FIG. 43 is a flowchart illustrating the procedure of processing executed by the digital camera;

Detailed Description Text (155):

An image transmitting unit 320 and an image database server 330 are connected via a network such as the Internet so as to be capable of communicating with each other. As will be described later, an image file obtained by image sensing using a digital camera 310 is applied to the image transmitting unit 320. The image file is transmitted from the image transmitting unit 320 to the image database server 330.

Detailed Description Text (157):

FIG. 38 is a block diagram showing the electrical structures of the digital camera 310, image transmitting unit 320, image database server 330 and client computer 1. Components in FIG. 38 that are identical with those of the client computer and server system of the first embodiment are designated by like reference characters and need not be described again. The client computers 1 of the first embodiment correspond to the client computers 1 in the third embodiment, and the server system of the first embodiment corresponds to the image database server 330 in the third embodiment.

Detailed Description Text (158):

The digital camera 310 includes an image input unit 312 for sensing the image of a subject and outputting image data representing the image of the subject, a processing unit 313 for executing predetermined signal processing such as data compression and a gamma correction based upon the image data output from the image input unit 312, and an image recording unit 314 for recording the image data, which has been subjected to signal processing by the processing unit 313, on a recording medium 305. The processing unit 313 has an internal timer 313A for measuring the time and date.

Detailed Description Text (159):

The digital camera 310 includes an interface 311 through which it is capable of being connected to a GPS (Global Positioning System) receiving unit 301 and bar code reader 302.

Detailed Description Text (164):

FIG. 39 is a diagram showing the structure of an image file generated by the digital camera.

Detailed Description Text (171):

The product information table includes an area for storing a bar-code number, an area for storing a product name (FinePix 700), and an area for storing product information (product information 1 indicates a digital camera, product information 2 indicates the price and product information 3 indicates inventory) concerning the product name. By specifying the bar-code number, a product name and product information can be searched by referring to the product information table.

Detailed Description Text (178):

FIG. 43 is a flowchart illustrating the procedure of processing executed by the digital camera 310.

Detailed Description Text (180):

A bar code corresponding to the image of interest is read by the bar code reader 302 (step 332). Data representing the bar code is input to the digital camera 310 via the interface 311 and the data is applied to the processing unit 313. The date and time of photography is read from the timer 313A included in the processing unit 313 (step 333).

Detailed Description Text (181):

The digital camera 310 and GPS receiving unit 301 are connected. Position information obtained by the GPS receiving unit 301 is read by the processing unit 313 of the digital camera 310 via the interface 311 (step 334).

Detailed Description Text (182):

The image data is recorded in the image-data recording area of the image file in the processing unit 313, and the photography date-and-time data and position information are stored in the additional-information recording area of the image file (step 335). The image file is recorded by the image recording unit 314 on the recording medium 305 that has been inserted into the digital camera 310 (step 336).

CLAIMS:

4. The system according to claim 1, wherein said server system further includes a memory in which the quantity of original-image data that can be stored is allocated beforehand to each client computer, said memory storing temporarily the original-image data that has been received by said original-image data receiving unit; said original-image data transmitting unit of said client computer sending said server system the original-image data including a data quantity less than the quantity of data allocated beforehand.

5. The system according to claim 4, wherein said server system further includes a data-quantity information transmitting unit for sending said client computer information representing a pre-allocated data quantity capable of being stored in said memory; said original-image data transmitting unit of said client computer sending said server system the original-image data including a data quantity less than the quantity of data allocated beforehand based upon said information, which represents the data quantity, transmitted from said data-quantity information transmitting unit of said server system.

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US006856414B1

(12) **United States Patent**
Haneda et al.

(10) **Patent No.:** **US 6,856,414 B1**
(45) **Date of Patent:** **Feb. 15, 2005**

(54) **IMAGE DATA COMMUNICATION SYSTEM,
SERVER SYSTEM, METHOD OF
CONTROLLING OPERATION OF SAME,
AND RECORDING MEDIUM STORING
PROGRAM FOR CONTROL OF SERVER
SYSTEM**

(75) Inventors: **Norihisa Haneda, Asaka (JP);
Yoshinori Ohta, Asaka (JP); Keisuke
Tanaka, Asaka (JP)**

(73) Assignee: **Fuji Photo Film Co., Ltd.,
Minami-Ashigara (JP)**

(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/482,275**

(22) Filed: **Jan. 13, 2000**

(30) **Foreign Application Priority Data**

Jan. 14, 1999 (JP) 11-008097
Mar. 24, 1999 (JP) 11-079569

(51) Int. Cl.⁷ **G06F 15/16; G06F 17/30**

(52) U.S. Cl. **358/1.15; 709/247; 707/104.1**

(58) Field of Search **358/1.9, 1.15,
358/518, 539; 382/167, 166, 232, 305,
243; 709/246, 247; 707/104.1**

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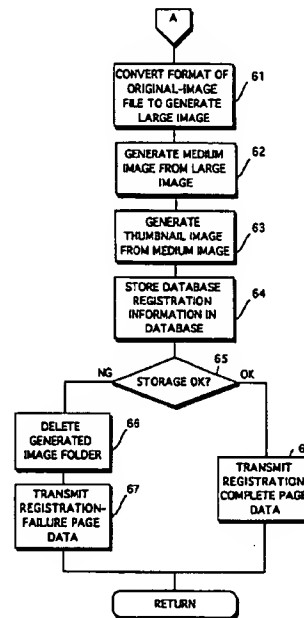
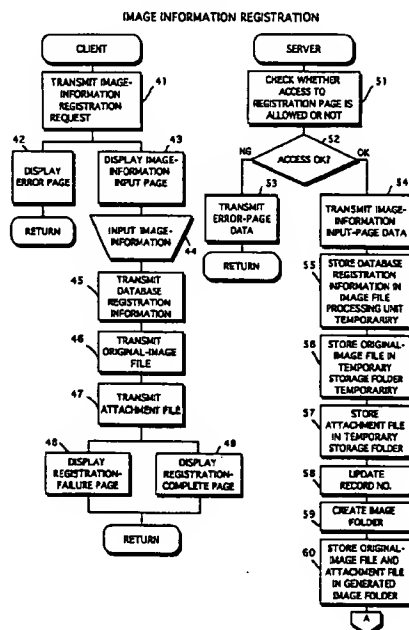
Primary Examiner—Scott A. Rogers

(74) *Attorney, Agent, or Firm*—McGinn & Gibb, PLLC

(57) **ABSTRACT**

Original images, large images, medium images and thumb-nail images are registered with a server system. An original-image file is transmitted from a client computer to the server system. The server system converts the format of the original-image file to generate a large-image file, generates a medium-image file, in which the quantity of data is less than that of the large-image file, from the large-image file, and generates a thumbnail-image file, in which the quantity of data is less than that of the medium-image file, from the medium-image file. The original-image file, large-image file, medium-image file and thumbnail-image file are placed on one folder and stored in an image file unit. After the folder containing the original-image file, etc., has been stored in the image file unit, the user of a client computer having access privileges is capable of accessing files such as the large-image file.

18 Claims, 37 Drawing Sheets



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L10: Entry 2 of 5

File: USPT

Oct 26, 2004

DOCUMENT-IDENTIFIER: US 6810376 B1

TITLE: System and methods for determining semantic similarity of sentences

Detailed Description Text (10):

The system itself communicates with other devices (e.g., other computers) via the network interface card (NIC) 111 connected to a network (e.g., Ethernet network), and/or modem 112 (e.g., 56K baud, ISDN, DSL, or cable modem), examples of which are available from 3Com of Santa Clara, Calif. The system 100 may also communicate with local occasionally-connected devices (e.g., serial cable-linked devices) via the communication interface 110, which may include a RS-232 serial port, a serial IEEE 1394 (formerly, "firewire") interface, a Universal Serial Bus (USB) interface, or the like. Devices that will be commonly connected locally to the communication interface 110 include laptop computers, handheld organizers, digital cameras, and the like.

Detailed Description Text (13):

Illustrated in FIG. 2, a computer software system 200 is provided for directing the operation of the computer system 100. The software system 200, which is stored in the main memory (RAM) 102 and on the fixed storage (e.g., hard disk) 116, includes a kernel or operating system (OS) 210. The OS 210 manages low-level aspects of computer operation, including managing execution of processes, memory allocation, file input and output (I/O), and device I/O. One or more application programs, such as client or server application software or "programs" 201 (e.g., 201a, 201b, 201c, 201d) may be "loaded" (i.e., transferred from the fixed storage 116 into the main memory 102) for execution by the computer system 100.

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US006810376B1

(12) **United States Patent**
Guan et al.

(10) **Patent No.:** **US 6,810,376 B1**
(45) Date of Patent: **Oct. 26, 2004**

(54) **SYSTEM AND METHODS FOR
 DETERMINING SEMANTIC SIMILARITY OF
 SENTENCES**

(75) **Inventors:** **Yi Guan, Clear Water Bay (HK);
 Pascale Fung, Clear Water Bay (HK)**

(73) **Assignee:** **Nusua Technologies SDN BHD
 (MY)**

(*) **Notice:** Subject to any disclaimer, the term of this
 patent is extended or adjusted under 35
 U.S.C. 154(b) by 269 days.

(21) **Appl. No.:** **09/614,465**

(22) **Filed:** **Jul. 11, 2000**

(51) **Int. Cl.⁷** **G06F 17/27**

(52) **U.S. Cl.** **704/9**

(58) **Field of Search** **704/9, 10; 395/2.66;
 707/2-6, 101; 364/419.13; 715/530, 531**

(56) **References Cited**

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Primary Examiner—Patrick N. Edouard

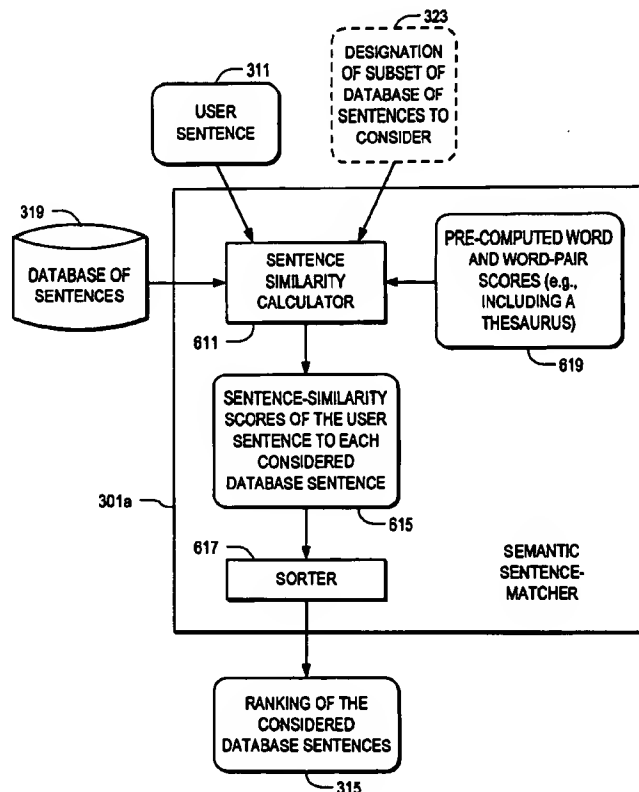
(74) *Attorney, Agent, or Firm*—Kevin A. Oliver; Foley
 Hoag LLP

(57)

ABSTRACT

A system and associated methods determine the semantic similarity of different sentences to one another. A particularly appropriate application of the present invention is to automatic processing of Chinese-language text, for example, for document retrieval. A method for computing the similarity between a first and a second set of words comprises identifying a word of the second set of words as being most similar to a word of the first set of words, wherein the word of the second set of words need not be identical to the word of the first set of words; and computing a score of the similarity between the first and second set of words based at least in part on the word of the second set of words.

33 Claims, 9 Drawing Sheets



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L10: Entry 3 of 5

File: USPT

Feb 3, 2004

DOCUMENT-IDENTIFIER: US 6687702 B2

TITLE: Methodology providing high-speed shared memory access between database middle tier and database server

Detailed Description Text (10):

The system itself communicates with other devices (e.g., other computers) via the network interface card (NIC) 111 connected to a network (e.g., Ethernet network), and/or modem 112 (e.g., 56K baud, ISDN, DSL, or cable modem), examples of which are available from 3Com of Santa Clara, Calif. The system 100 may also communicate with local occasionally-connected devices (e.g., serial cable-linked devices) via the communication ("comm") interface 110, which may include a RS-232 serial port, a Universal Serial Bus (USB) interface, or the like. Devices that will be commonly connected locally to the interface 110 include laptop computers, handheld organizers, digital cameras, and the like.

Detailed Description Text (33):

Of particular interest to the present invention is the instance where shared-memory driver access is specified. In that case, the method first attaches to shared memory at step 603 and then allocate the socket at step 604 (i.e., the shared-memory socket factory is loaded/allocated). The socket itself is a shared memory socket and not a network socket; accordingly, the corresponding socket data structure resides in the database server's shared memory. As a result, a shared memory socket will be allocated only in the instance where it is possible to attach to the database server's shared memory. Therefore, the method proceeds as follows.

Detailed Description Text (34):

As indicated at step 603, each allocated shared-memory socket is attached to the shared memory segment (of the database server), through execution of the shmattach () native method. In the currently preferred embodiment, as part of the foregoing socket allocation/attachment, a given shared-memory socket will next be bound to particular send and receive buffers allocated in the database server's shared-memory segment. The shared memory segment of the database server includes all key data structures of the database server that are relevant for high-speed database access, including providing access to the previously-mentioned send buffers and receive buffers. The static data member nattach (e.g., integer) is employed to indicate whether an attachment to shared memory has already occurred. This is initially set to 0 (false) and is reset to 1 (true) when actual attachment has occurred.

Detailed Description Text (36):

Once the shared-memory socket factory has been established and one or more shared-memory sockets have been allocated, the sockets may be employed for effecting high-speed shared-memory communication with the database server.

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US006687702B2

(12) **United States Patent**
Vaitheeswaran et al.

(10) **Patent No.:** **US 6,687,702 B2**
(45) Date of Patent: **Feb. 3, 2004**

(54) **METHODOLOGY PROVIDING HIGH-SPEED SHARED MEMORY ACCESS BETWEEN DATABASE MIDDLE TIER AND DATABASE SERVER**

(75) **Inventors:** **Girish Vaitheeswaran**, Fremont, CA (US); **Prasanta Ghosh**, Alameda, CA (US); **Taghi Fatemi**, Puteaux (FR)

(73) **Assignee:** **Sybase, Inc.**, Dublin, CA (US)

(*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 289 days.

(21) **Appl. No.:** **09/965,231**

(22) **Filed:** **Sep. 25, 2001**

(65) **Prior Publication Data**

US 2003/0014552 A1 Jan. 16, 2003

Related U.S. Application Data

(60) Provisional application No. 60/298,660, filed on Jun. 15, 2001.

(51) **Int. Cl.**⁷ **G06F 17/30**

(52) **U.S. Cl.** **707/10; 707/104.1**

(58) **Field of Search** **707/1, 2, 3, 4, 707/5, 6, 7, 8, 9, 10, 100, 101, 103, 104**

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Primary Examiner—Diane D. Mizrahi

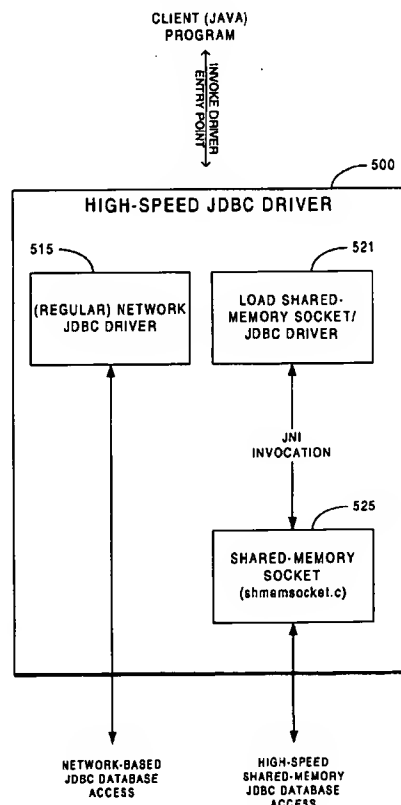
Assistant Examiner—Yicun Wu

(74) *Attorney, Agent, or Firm*—John A. Smart

(57) **ABSTRACT**

A multi-tier database system is modified such that a middle-tier application server (EJB server) and a database server run on the same host computer and communicate via shared-memory interprocess communication. The system includes a database (e.g., JDBC) driver thread that attaches to the database server, specifically by attaching to the database server's shared memory segment. Operation of the JDBC driver is modified to provide direct access between the middle tier (i.e., EJB server) and the database server, when the two are operating on the same host computer.

43 Claims, 8 Drawing Sheets



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L10: Entry 4 of 5

File: USPT

Feb 3, 2004

DOCUMENT-IDENTIFIER: US 6687689 B1

TITLE: System and methods for document retrieval using natural language-based queries

Detailed Description Text (10):

The system itself communicates with other devices (e.g., other computers) via the network interface card (NIC) 111 connected to a network (e.g., Ethernet network), and/or modem 112 (e.g., 56 K baud, ISDN, DSL, or cable modem), examples of which are available from 3 Com of Santa Clara, Calif. The system 100 may also communicate with local occasionally-connected devices (e.g., serial cable-linked devices) via the communication interface 110, which may include a RS-232 serial port, a serial IEEE 1394 (formerly, "firewire") interface, a Universal Serial Bus (USB) interface, or the like. Devices that will be commonly connected locally to the communication interface 110 include laptop computers, handheld organizers, digital cameras, and the like.

Detailed Description Text (13):

Illustrated in FIG. 2, a computer software system 200 is provided for directing the operation of the computer system 100. The software system 200, which is stored in the main memory (RAM) 102 and on the fixed storage (e.g., hard disk) 116, includes a kernel or operating system (OS) 210. The OS 210 manages low-level aspects of computer operation, including managing execution of processes, memory allocation, file input and output (I/O), and device I/O. One or more application programs, such as client or server application software or "programs" 201 (e.g., 201a, 201b, 201c, 201d) may be "loaded" (i.e., transferred from the fixed storage 116 into the main memory 102) for execution by the computer system 100.

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US006687689B1

(12) **United States Patent**
Fung et al.

(10) Patent No.: **US 6,687,689 B1**
(45) Date of Patent: **Feb. 3, 2004**

(54) **SYSTEM AND METHODS FOR DOCUMENT RETRIEVAL USING NATURAL LANGUAGE-BASED QUERIES**

(75) Inventors: **Pascale Fung**, Clear Water Bay; **Chi Shun Cheung**, Yuen Long; **Yi Guan**, Clear Water Bay; **Yongsheng Yang**, Kowloon, all of (HK)

(73) Assignee: **NuSuara Technologies Sdn. Bhd.**, Selangor (MY)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 125 days.

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(21) Appl. No.: **09/613,849**

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(22) Filed: **Jul. 11, 2000**

Related U.S. Application Data

(60) Provisional application No. 60/212,304, filed on Jun. 17, 2000, and provisional application No. 60/212,486, filed on Jun. 16, 2000.

(51) Int. Cl.⁷ **G06F 17/30**

(52) U.S. Cl. **707/3; 707/6**

(58) Field of Search **707/3, 1, 2, 4, 707/5, 6, 7, 10, 100, 104; 345/703**

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Primary Examiner—Sanjiv Shah

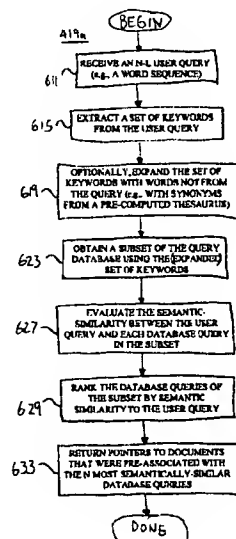
(74) Attorney, Agent, or Firm—Kevin A. Oliver; Foley Hoag LLP

(57)

ABSTRACT

A system and associated methods identify documents relevant to an inputted natural-language user query. One associate method includes: selecting a set of keywords from the user query; determining at least one word, not necessarily found in the user query, that is semantically similar to a keyword of the set of keywords; using the set of keywords and the at least one word to determining a subset of word sets from a database of pre-stored word sets, wherein the pre-stored word sets are each pre-associated with at least one document; determining a plurality of word sets, from the subset of word sets, that is most semantically similar to the user query; and identifying documents that have been pre-associated with the plurality of word sets as being relevant to the natural-language user query.

2 Claims, 7 Drawing Sheets



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L10: Entry 5 of 5

File: USPT

Mar 14, 2000

DOCUMENT-IDENTIFIER: US 6038295 A

TITLE: Apparatus and method for recording, communicating and administering digital images

Brief Summary Text (6):

Digital image cameras are currently available on the market, as known, for example, from the publication "Market Over View: Low-Cost Digital Cameras, Canon: Powershot 600", MACup, pages 100-101, No. 4, 1996.

Brief Summary Text (14):

These problems are solved by a communication system for recording and administering the digital images which includes at least one telephone unit that in addition to a telephone function has a digital image pick up unit for recording images, a telephone memory for storing the digital images, and a processor for processing the digital images. The telephone unit may associate classification information with the digital images. A transmission system is coupled to the telephone unit and to a server for transmitting of the data which includes the digital images and potentially the classification information from the telephone unit to the server. The server has a receiving unit for receiving the data sent by the telephone unit, and an analysis unit for analyzing the data with respect to the classification information which characterize the digital images, and a memory in which the digital images may be archived, taking into consideration the classification information during the archiving step. Specifically, the communication system has at least one telephone unit, a server and a transmission system for transmitting the data from the telephone unit to the server. The telephone unit has a telephone portion and at least one digital image recorder which has the function of a digital camera, a telephone unit memory for storing the digital images taken by the digital camera and a data processor for processing the digital image data. The server includes a reception unit, an analysis unit which analyzes the data that is sent from the telephone unit with respect to classification information, also referred to as order features, as well as a memory for storing the digital images. The order features, or classification information, characterize the digital images and are taken into consideration as the images are stored.

Detailed Description Text (24):

The classification information OM which are transmitted with the digital image or which are allocated to the digital image are used for archiving the images in the server memory.

Detailed Description Text (30):

Thus, there is shown and described a telephone unit which is either a wire transmitting telephone or a cordless phone and possibly in a cellular phone which incorporates therein a digital camera so that photographic images may be obtained by the digital camera portion and transmitted via the telephone portion. The transmitted digital images are preferably compressed and are preferably provided with classification information during the transmission so that the server receiving the images can identify and store the images in a manner so that they are easily retrieved.

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US006038295A

United States Patent [19]**Mattes**[11] **Patent Number:** **6,038,295**[45] **Date of Patent:** **Mar. 14, 2000**

[54] **APPARATUS AND METHOD FOR
RECORDING, COMMUNICATING AND
ADMINISTERING DIGITAL IMAGES**

[75] **Inventor:** **Helnz Mattes, Munich, Germany**

[73] **Assignee:** **Siemens Aktiengesellschaft, Munich,
Germany**

[21] **Appl. No.:** **08/877,488**

[22] **Filed:** **Jun. 17, 1997**

[30] **Foreign Application Priority Data**

Jun. 17, 1996 [DE] Germany 196 24 128

[51] **Int. Cl.⁷** **H04M 11/00**

[52] **U.S. Cl.** **379/93.25; 348/211; 704/270**

[58] **Field of Search** 348/14-17, 211,
348/223, 232, 231, 7, 239, 522; 455/418-420;
379/88-89, 93.21, 93.25; 707/3-5, 10;
395/2.66; 704/270; 396/283

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Primary Examiner—Paul Loomis

Assistant Examiner—George Eng

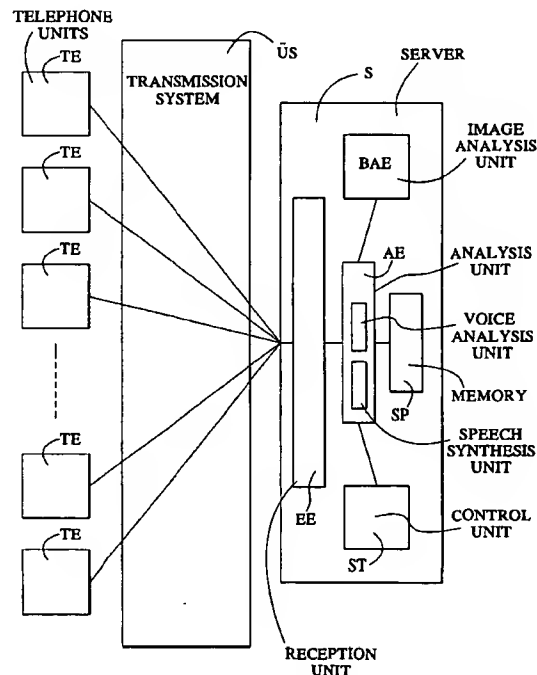
Attorney, Agent, or Firm—Hill & Simpson

[57]

ABSTRACT

A communication system includes at least one telephone unit, a transmission system for communicating from the telephone unit, and a server for receiving information via the transmission system. The telephone unit includes a digital image pick up by which images are recorded, transmitted to the server, and stored in the server depending upon classification information which characterizes the digital images and which is associated with the digital image data. The classification information is determined by an analysis unit in the server.

26 Claims, 4 Drawing Sheets



Freeform Search

Database:	US Pre-Grant Publication Full-Text Database US Patents Full-Text Database US OCR Full-Text Database EPO Abstracts Database JPO Abstracts Database Derwent World Patents Index IBM Technical Disclosure Bulletins
Term:	((allocat\$ adj3 memor\$) with server\$).ab.
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L12 ((allocat\$ adj3 memor\$) with server\$).ab.	10	L12	
L11 ((allocat\$ adj3 memor\$) with server\$)	179	L11	
L10 L9 and (digital adj1 camera)	5	L10	
L9 ((allocat\$ with memory) with server\$)	422	L9	
L8 ((allocat\$ with memory) with (remote adj1 server\$))	0	L8	
L7 L6 and (allocat\$ with memory)	48	L7	
L6 (digital adj1 camera) and (remote adj1 server\$)	166	L6	
L5 L4 and (digital adj1 camera)	0	L5	
L4 L3 and (allocat\$ with memory)	3	L4	
L3 ((download\$) and (remote adj2 server\$)).ab.	59	L3	
L2 L1 and ((download\$) and (remote adj2 server\$)).ab.	0	L2	
L1 (digital adj2 camera\$).ab.	844	L1	

42/4,5

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☐ 1. Document ID: US 6751798 B1

L12: Entry 1 of 10

File: USPT

Jun 15, 2004

DOCUMENT-IDENTIFIER: US 6751798 B1

TITLE: Method and apparatus for performing distributed object calls using proxies and memory allocation

Abstract Text (1):

A method and apparatus for performing distributed object calls uses proxies and memory allocation and deallocation. Specifically, an object reference to an object is obtained. The object reference is used to create a proxy handle data structure that will represent the object. The proxy handle is passed to a client application stub function which calls the object. The stub function is also passed input and output parameters along with exception information. An object request broker finds an appropriate implementation in a server application. The server application allocates memory for implementing the call. The object is implemented and the memory allocated by the server application is deallocated. The server application responds to the client, whereupon the client makes another object call using the same proxy handle or destroys the proxy handle. Multiple initialization of object calls is avoided because the object call can be initialized just once for a particular object. Moreover, resources are preserved by minimizing wild pointers and memory leaks that can occur during the calling and implementation of objects.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 2. Document ID: US 6182151 B1

L12: Entry 2 of 10

File: USPT

Jan 30, 2001

DOCUMENT-IDENTIFIER: US 6182151 B1

TITLE: Method and apparatus for batch storage of objects in a client-server storage management system

Abstract Text (1):

The present invention is directed to a storage management system. More particularly it relates to a client/server library system for storing objects in the library system in batches by avoiding storing those objects in an intermediary storage, such as in a client storage space or in a cache, before storing them in the library system. The invention includes a library server, object server and library client, in which an application program interacts with the library client for storing objects, or binary large objects (blobs), in the object server under control of the

library server. The present invention provides for an application program to read in objects into a memory space allocated and managed by the application program, or into an application program memory space allocated and managed by the library client. When the library client stores the objects residing in the allocated memory space, copies of the objects are transferred directly from the allocated memory space to the object server without having another copy of the object first being made in the library client, such as in the library client storage space or in a client cache. Accordingly, batch storage of objects is accomplished more efficiently than in conventional library system.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 3. Document ID: US 6041344 A

L12: Entry 3 of 10

File: USPT

Mar 21, 2000

DOCUMENT-IDENTIFIER: US 6041344 A

TITLE: Apparatus and method for passing statements to foreign databases by using a virtual package

Abstract Text (1):

An apparatus and method for accessing foreign processes in a heterogeneous database environment includes a local database server having heterogeneous services to selectively send foreign operations to the appropriate foreign processes in a controllable manner. A client application sending a statement to the local database server is checked by the local server to determine if the statement includes a reference to a foreign database system. The heterogeneous services selectively outputs a the foreign request to an agent process in communication with the foreign database system via an Application Programming Interface (API), where a foreign database driver corresponding to the foreign database maps the request from the API to the format of the foreign database. The local database server selectively allocates memory space for expected results from the foreign database, and completes execution of the statement upon receiving the expected results from the agent process. Hence, the agent process efficiently manages client statements having expressions to be processed by a foreign database system.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 4. Document ID: US 6021445 A

L12: Entry 4 of 10

File: USPT

Feb 1, 2000

DOCUMENT-IDENTIFIER: US 6021445 A

TITLE: Remote API processing method using network protocols

Abstract Text (1):

A remote API processing method using network protocols which allows a client terminal to off-load client application API requests to a server for processing. The method includes the steps of allocating a block of operating memory by the

client terminal, placing data defining the client terminal API request in the block of operating memory by the client terminal, sending the data and instructions for creating the block of memory to the server by the client terminal, allocating a second block of operating memory like the first block of operating memory by the server using the instructions received from the client terminal, storing the data from the client terminal in the second block of operating memory by the server, processing the client terminal API request and storing API response data in the second block of memory by an API service routine executed by the server, sending the API response data, storing the API response data from the server in the first block of operating memory by the client terminal, and processing the API response data from the third block of operating memory by the application program.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWMC	Draw D
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☐ 5. Document ID: US 6014727 A

L12: Entry 5 of 10

File: USPT

Jan 11, 2000

DOCUMENT-IDENTIFIER: US 6014727 A

**** See image for Certificate of Correction ****

TITLE: Method and system for buffering messages in an efficient but largely undivided manner

Abstract Text (1):

The invention relates, in one embodiment, to a method in a computer network having a server computer coupled to a client computer for exchanging a message from the client computer to the server computer. The method includes receiving at the server computer a first data portion associated with the message from the client computer. The method further includes allocating a first memory space in a memory of the server computer for buffering the first data portion. If a second data portion associated with the message is received at the server computer from the client computer, the method also includes writing the first memory space to a nonvolatile memory of the server computer, thereby permitting the first memory space to be unallocated, and allocating a second memory space in the memory of the server computer for buffering the second data portion, the second memory space being larger than the first memory space.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWMC	Draw D
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☐ 6. Document ID: US 5918009 A

L12: Entry 6 of 10

File: USPT

Jun 29, 1999

DOCUMENT-IDENTIFIER: US 5918009 A

TITLE: Technique for sharing information on world wide web

Abstract Text (1):

Using a server system in accordance with the invention, a user and his/her companions can share information on the World Wide Web (WWW). The server system

allocates a memory space for storing information particular to the user. This user memory space is associated with the user's login identification (ID) provided to the server system during the user login. Web information obtained by the user from the server system, or a representation of such information, is stored in the user memory space. In sharing the web information, the user's companions need to log onto the server system separately using the user's login ID. The server system then provides the companions with the web information based on the information currently stored in the memory space associated with the user's login ID provided by the companions.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 7. Document ID: US 5875442 A

L12: Entry 7 of 10

File: USPT

Feb 23, 1999

DOCUMENT-IDENTIFIER: US 5875442 A

**** See image for Certificate of Correction ****

TITLE: Method and apparatus for enhancing access to a remote database employing dynamic buffer management

Abstract Text (1):

A method, system and process for enhancing a database server by improving dynamic memory allocation and memory copying during the process of reconstructing a data structure from a communication buffer.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 8. Document ID: US 5829041 A

L12: Entry 8 of 10

File: USPT

Oct 27, 1998

DOCUMENT-IDENTIFIER: US 5829041 A

TITLE: Method and apparatus for managing single virtual space suitable for distributed processing

Abstract Text (1):

A single virtual space management scheme suitable for a distributed system. The single virtual space for arranging programs and/or data among a plurality of computers forming the distributed system are divided into a plurality of regions called memory chapters, and a part of the single virtual space to be managed independently by each computer is requested from each computer in units of these memory chapters. Then, a server allocates one of the memory chapters to each computer in response to each request from each computer, while managing allocations of the memory chapters to the plurality of computers so as not to allocate each one of the memory chapters to more than one computers. Each memory chapter allocated to each computer is independently managed by further dividing each memory chapter into a plurality of sub-regions called memory sections, and carrying out an access protection in units of these memory sections at each computer.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 9. Document ID: US 5491808 A

L12: Entry 9 of 10

File: USPT

Feb 13, 1996

DOCUMENT-IDENTIFIER: US 5491808 A

TITLE: Method for tracking memory allocation in network file server

Abstract Text (1):

A method for dynamically tracking memory resource allocations/deallocations of a program resident in the memory of a network file server is disclosed wherein calls to system memory allocation functions are intercepted and diverted to memory resident tracker routines, interposed between the caller and the called functions to monitor returns from the called functions. Public symbol lists of application program interfaces are scanned for functions to be tracked, and function entry points are taken over by replacing initial instructions of the system functions with jumps to the tracker routines. The tracker routines then call the remainder of the system functions and record the reply before passing control back to the original caller program. Information on allocated blocks is written to ABLK blocks taken from an ABLK free block pool allocated at tracker startup. Subsequent deallocations of the allocated blocks release the same ABLK blocks back to the ABLK free pool. Information on "NULL" pointer and similar returns indicating allocation/deallocation errors is written to MSG queue blocks taken from a MSG free block pool allocated at tracker startup. Log file generator threads are activated to list the filled ABLK and MSG blocks when signalled. Cleanup routines restore the replaced code and deallocate all ABLK and MSG memory blocks when the tracker exits.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 10. Document ID: US 5412805 A

L12: Entry 10 of 10

File: USPT

May 2, 1995

DOCUMENT-IDENTIFIER: US 5412805 A

TITLE: Apparatus and method for efficiently allocating memory to reconstruct a data structure

Abstract Text (1):

A method, system and process for enhancing a database server by improving memory allocation and memory copying during the process of reconstructing a data structure.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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L12: Entry 2 of 10

File: USPT

Jan 30, 2001

DOCUMENT-IDENTIFIER: US 6182151 B1

TITLE: Method and apparatus for batch storage of objects in a client-server storage management system

Abstract Text (1):

The present invention is directed to a storage management system. More particularly it relates to a client/server library system for storing objects in the library system in batches by avoiding storing those objects in an intermediary storage, such as in a client storage space or in a cache, before storing them in the library system. The invention includes a library server, object server and library client, in which an application program interacts with the library client for storing objects, or binary large objects (blobs), in the object server under control of the library server. The present invention provides for an application program to read in objects into a memory space allocated and managed by the application program, or into an application program memory space allocated and managed by the library client. When the library client stores the objects residing in the allocated memory space, copies of the objects are transferred directly from the allocated memory space to the object server without having another copy of the object first being made in the library client, such as in the library client storage space or in a client cache. Accordingly, batch storage of objects is accomplished more efficiently than in conventional library system.

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US006182151B1

(12) **United States Patent**
Cheng et al.

(10) Patent No.: **US 6,182,151 B1**
(45) Date of Patent: **Jan. 30, 2001**

(54) **METHOD AND APPARATUS FOR BATCH STORAGE OF OBJECTS IN A CLIENT-SERVER STORAGE MANAGEMENT SYSTEM**

(75) Inventors: **Hsiuying Cheng**, Fremont; **Jung-hsin Hu**; **Kyung B. Lee**, both of San Jose, all of CA (US)

(73) Assignee: **International Business Machines Corporation**, Armonk, NY (US)

(*) Notice: Under 35 U.S.C. 154(b), the term of this patent shall be extended for 0 days.

(21) Appl. No.: **08/688,272**

(22) Filed: **Jul. 29, 1996**

(51) Int. Cl.⁷ **G06F 9/00; G06F 9/46; G06F 15/163**

(52) U.S. Cl. **709/310; 709/101**

(58) Field of Search **395/680, 609, 395/603, 200.43; 370/62; 709/213, 310-332, 200, 101**

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Primary Examiner—Majid Banankhah

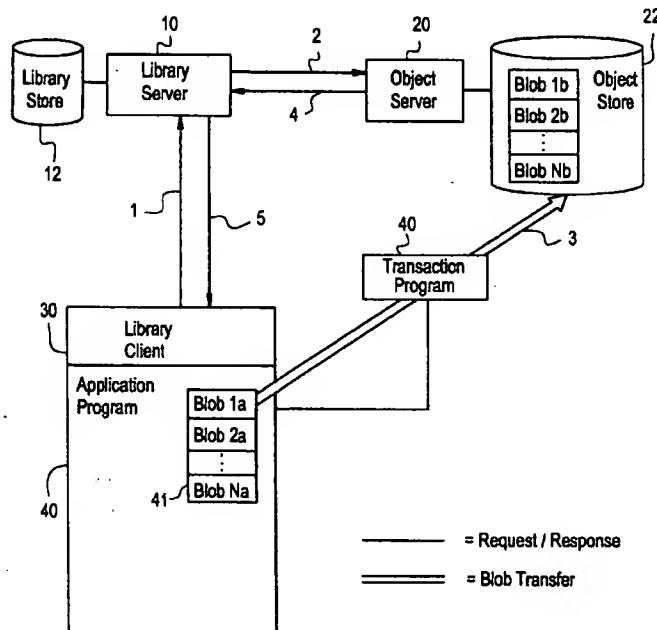
Assistant Examiner—P. G. Caldwell

(74) *Attorney, Agent, or Firm*—Sughrue, Mion, Zinn, Macpeak & Seas, PLLC

(57) **ABSTRACT**

The present invention is directed to a storage management system. More particularly it relates to a client/server library system for storing objects in the library system in batches by avoiding storing those objects in an intermediary storage, such as in a client storage space or in a cache, before storing them in the library system. The invention includes a library server, object server and library client, in which an application program interacts with the library client for storing objects, or binary large objects (blobs), in the object server under control of the library server. The present invention provides for an application program to read in objects into a memory space allocated and managed by the application program, or into an application program memory space allocated and managed by the library client. When the library client stores the objects residing in the allocated memory space, copies of the objects are transferred directly from the allocated memory space to the object server without having another copy of the object first being made in the library client, such as in the library client storage space or in a client cache. Accordingly, batch storage of objects is accomplished more efficiently than in conventional library system.

12 Claims, 3 Drawing Sheets



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L12: Entry 3 of 10

File: USPT

Mar 21, 2000

DOCUMENT-IDENTIFIER: US 6041344 A

TITLE: Apparatus and method for passing statements to foreign databases by using a virtual package

Abstract Text (1):

An apparatus and method for accessing foreign processes in a heterogeneous database environment includes a local database server having heterogeneous services to selectively send foreign operations to the appropriate foreign processes in a controllable manner. A client application sending a statement to the local database server is checked by the local server to determine if the statement includes a reference to a foreign database system. The heterogeneous services selectively outputs a the foreign request to an agent process in communication with the foreign database system via an Application Programming Interface (API), where a foreign database driver corresponding to the foreign database maps the request from the API to the format of the foreign database. The local database server selectively allocates memory space for expected results from the foreign database, and completes execution of the statement upon receiving the expected results from the agent process. Hence, the agent process efficiently manages client statements having expressions to be processed by a foreign database system.

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US006041344A

United States Patent [19][11] **Patent Number:** **6,041,344****Bodamer et al.**[45] **Date of Patent:** **Mar. 21, 2000**

[54] **APPARATUS AND METHOD FOR PASSING STATEMENTS TO FOREIGN DATABASES BY USING A VIRTUAL PACKAGE**

[75] **Inventors:** Roger Bodamer; Jacco Draaijer, both of Mountain View; Eric Voss, Foster City; Raghu Mani, Mountain View, all of Calif.

[73] **Assignee:** Oracle Corporation, Redwood Shores, Calif.

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[21] **Appl. No.:** 08/880,325

[22] **Filed:** Jun. 23, 1997

[51] **Int. Cl.**⁷ G06F 15/16

[52] **U.S. Cl.** 709/203; 709/245; 709/246; 709/217

[58] **Field of Search** 395/200.31, 500, 395/200.32, 200.37, 200.76, 200.75; 707/10, 103, 109, 1, 2, 3, 202, 203, 207, 246, 245, 217; 709/201, 203, 207, 246, 245, 217

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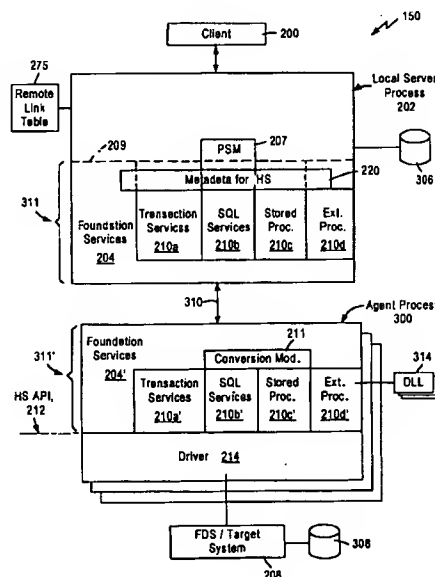
Primary Examiner—Mehmet B. Geckil

Attorney, Agent, or Firm—McDermott, Will & Emery

[57] **ABSTRACT**

An apparatus and method for accessing foreign processes in a heterogeneous database environment includes a local database server having heterogeneous services to selectively send foreign operations to the appropriate foreign processes in a controllable manner. A client application sending a statement to the local database server is checked by the local server to determine if the statement includes a reference to a foreign database system. The heterogeneous services selectively outputs a the foreign request to an agent process in communication with the foreign database system via an Application Programming Interface (API), where a foreign database driver corresponding to the foreign database maps the request from the API to the format of the foreign database. The local database server selectively allocates memory space for expected results from the foreign database, and completes execution of the statement upon receiving the expected results from the agent process. Hence, the agent process efficiently manages client statements having expressions to be processed by a foreign database system.

20 Claims, 7 Drawing Sheets



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L12: Entry 4 of 10

File: USPT

Feb 1, 2000

DOCUMENT-IDENTIFIER: US 6021445 A

TITLE: Remote API processing method using network protocols

Abstract Text (1):

A remote API processing method using network protocols which allows a client terminal to off-load client application API requests to a server for processing. The method includes the steps of allocating a block of operating memory by the client terminal, placing data defining the client terminal API request in the block of operating memory by the client terminal, sending the data and instructions for creating the block of memory to the server by the client terminal, allocating a second block of operating memory like the first block of operating memory by the server using the instructions received from the client terminal, storing the data from the client terminal in the second block of operating memory by the server, processing the client terminal API request and storing API response data in the second block of memory by an API service routine executed by the server, sending the API response data, storing the API response data from the server in the first block of operating memory by the client terminal, and processing the API response data from the third block of operating memory by the application program.

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US006021445A

United States Patent [19]
Chapa

[11] **Patent Number:** **6,021,445**
[45] **Date of Patent:** **Feb. 1, 2000**

[54] **REMOTE API PROCESSING METHOD
USING NETWORK PROTOCOLS**

[75] Inventor: **Bruce E. Chapa, Anderson, S.C.**

[73] Assignee: **NCR Corporation, Dayton, Ohio**

[21] Appl. No.: **08/221,124**

[22] Filed: **Mar. 30, 1994**

[51] Int. Cl.⁷ **G06F 9/44**

[52] U.S. Cl. **709/302**

[58] Field of Search **395/650, 700**

[56] **References Cited**

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Primary Examiner—Tariq R. Hafiz

Assistant Examiner—John Q. Chavis

Attorney, Agent, or Firm—Paul W. Martin

[57] **ABSTRACT**

A remote API processing method using network protocols which allows a client terminal to off-load client application API requests to a server for processing. The method includes the steps of allocating a block of operating memory by the client terminal, placing data defining the client terminal API request in the block of operating memory by the client terminal, sending the data and instructions for creating the block of memory to the server by the client terminal, allocating a second block of operating memory like the first block of operating memory by the server using the instructions received from the client terminal, storing the data from the client terminal in the second block of operating memory by the server, processing the client terminal API request and storing API response data in the second block of memory by an API service routine executed by the server, sending the API response data, storing the API response data from the server in the first block of operating memory by the client terminal, and processing the API response data from the third block of operating memory by the application program.

6 Claims, 3 Drawing Sheets

